

## Unit 15.5

### Day 3

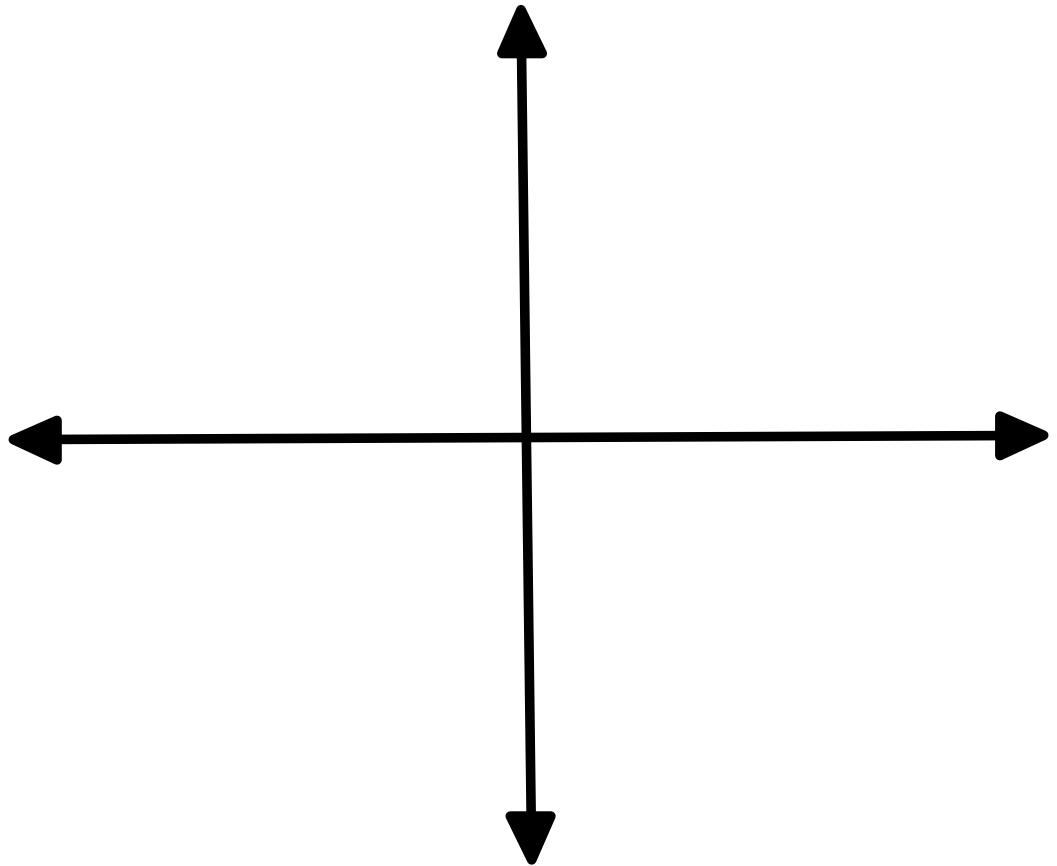
## Graphing Rational Functions

### Part 2

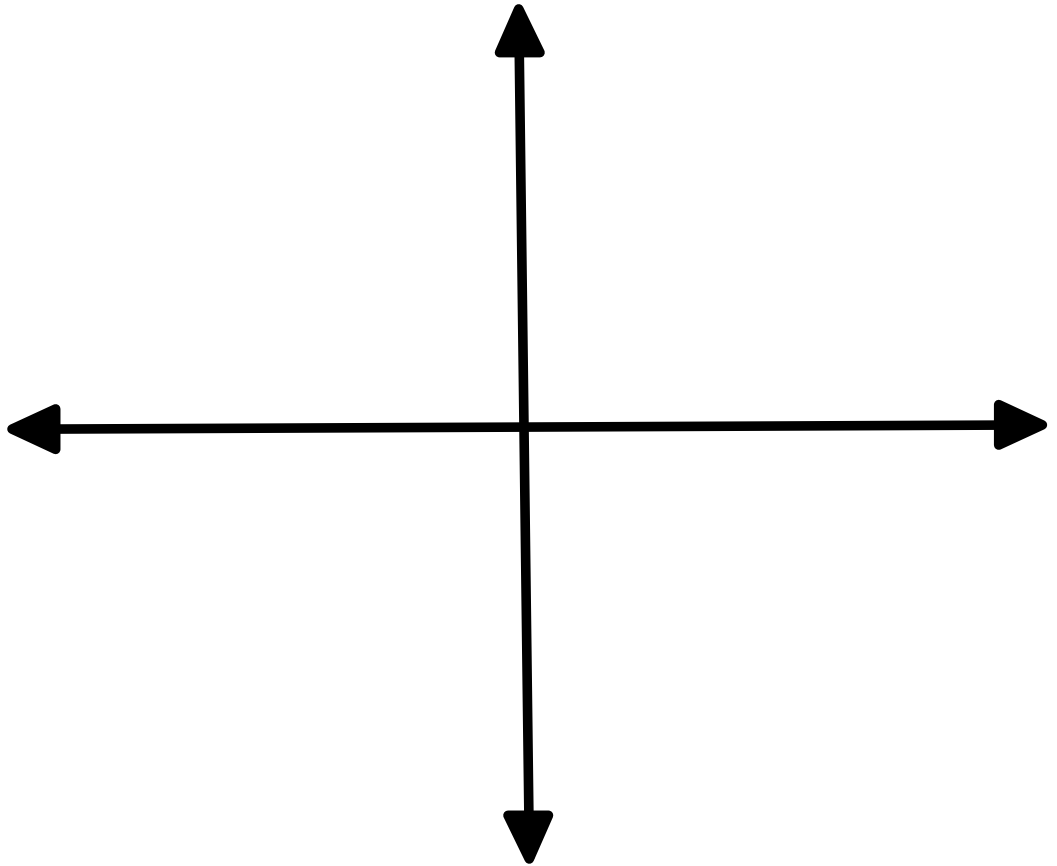
Remember:

- 1) Always try to reduce the rational functions first.
- 2) If the function reduces to a linear or quadratic, it will not have asymptotes.
- 3) If you cancel a restriction, it will create a hole in the graph.

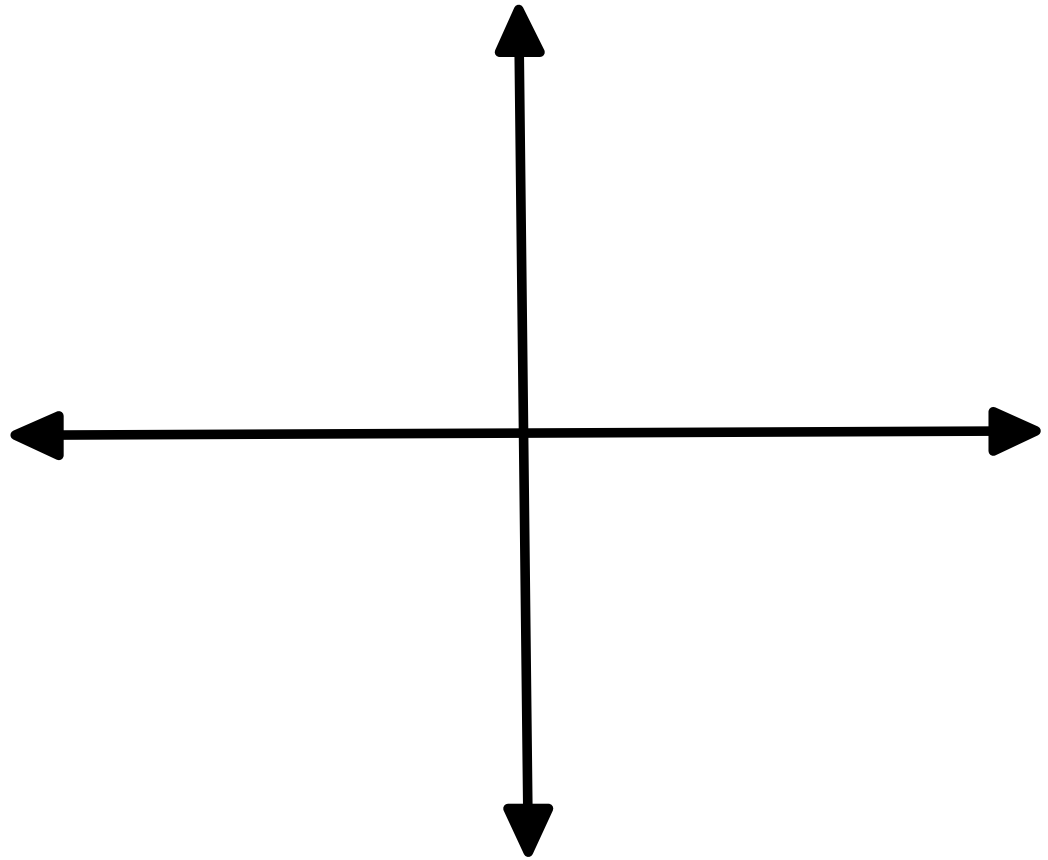
Ex1:  $f(x) = \frac{x^2 - 4}{x + 2}$



Ex2:  $f(x) = \frac{x^3 + 2x}{x}$



Ex3:  $f(x) = \frac{3}{(x-2)^2}$



Ex4:  $f(x) = \frac{6x^2-3x}{x^2+x-2} = \frac{3x(2x-1)}{(x+2)(x-1)}$

VA  $x=1, x=-2$

HA  $y=6$  ( $4/3, 6$ )

$6 = \frac{6x^2-3x}{x^2+x-2}$

$6x^2+6x-12 = 6x^2-3x$

$9x = 12$

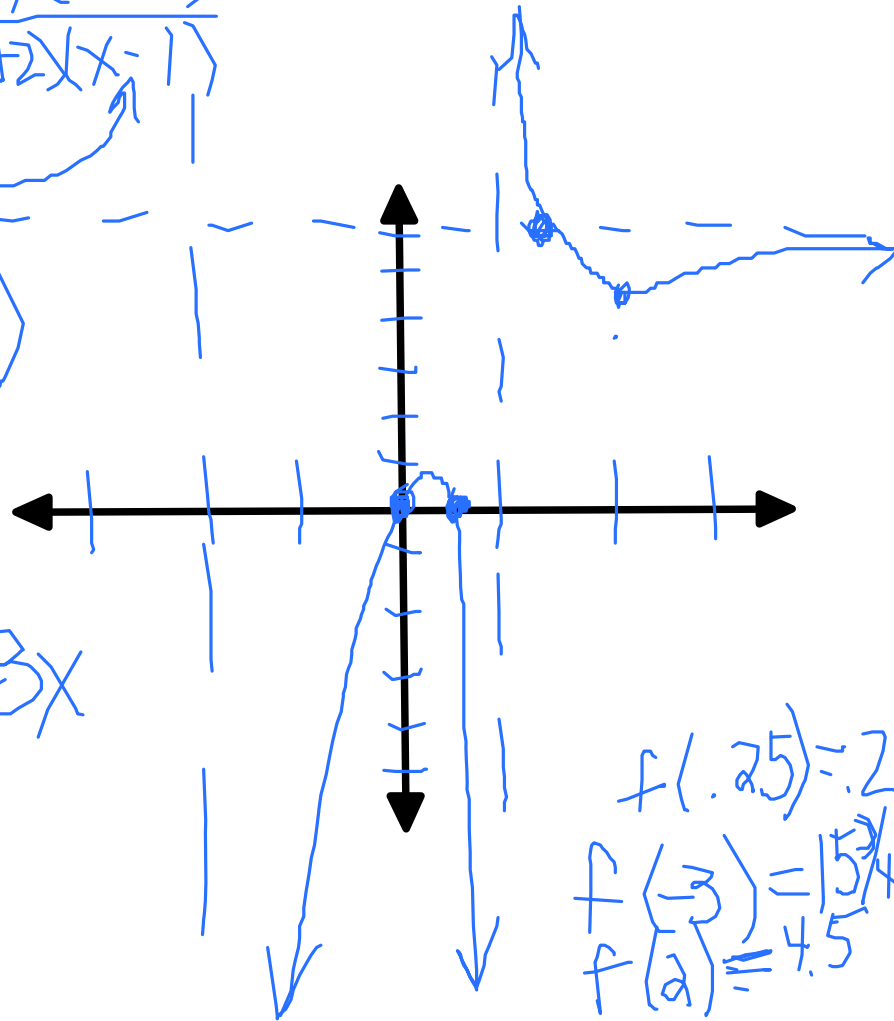
$x = 4/3$

Xint

$0 = \frac{6x^2-3x}{x^2+x-2}$

$0 = 6x^2-3x$

$0 = 3x(2x-1)$



$f(1.25) = 2$

$f(-3) = 15/4$

$f(2) = 4.5$

$$x=0 \quad x=\frac{1}{2}$$

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